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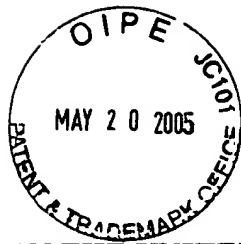
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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	09/544,000	
	Filing Date	April 6, 2000	
	First Named Inventor	David A. Cathey	
	Group Art Unit	2674	
	Examiner Name	A. Abdulsalam	
		Attorney Docket Number	2269-3976US (98-0063.00/US)

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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	James R. Duzan Registration No. 28,393
Signature	
Date	May 20, 2005

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

David A. Cathey

Serial No.: 09/544,000

Filed: April 6, 2000

For: CORDLESS COMPUTER
KEYBOARD WITH ILLUMINATED KEYS

Confirmation No.: 7982

Examiner: A. Abdulsalam

Group Art Unit: 2674

Attorney Docket No.: 2269-3976US
(98-0063.00/US)

NOTICE OF EXPRESS MAILING

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APPEAL BRIEF

Mail Stop Appeal Brief – Patent
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sirs:

This brief is submitted in the format required under 37 C.F.R. § 41.37(c). A check in the amount of \$500.00 for the fee under 37 C.F.R. § 41.20(b)(2) for filing a brief in support of an appeal is enclosed.

1) REAL PARTY IN INTEREST

The real party in interest in the present pending appeal is Micron Technology, Inc., Assignee of the pending application as recorded with the United States Patent and Trademark Office on April 6, 2000, at Reel 010726, Frame 0509.

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2) **RELATED APPEALS AND INTERFERENCES**

The Appellant, the Appellant's representative, and the Assignee are not aware of any pending appeal or interference that would relate to, directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

3) **STATUS OF THE CLAIMS**

Claims 1, 2, 5, 8, 9, 19, and 22 are pending in the application.

Claims 3, 4, 6, 7, 10 through 18, 20, 21, 23, and 24 are canceled.

Claims 1, 2, 5, 8, 9, 19, and 22 stand rejected in the Final Rejection of November 15, 2004.

No claims are allowed.

Claims 1, 2, 5, 8, 9, 19, and 22 are the subject of the pending appeal.

4) **STATUS OF AMENDMENTS**

A Final Office Action ("Final Office Action") was mailed on November 15, 2004, in which claims 1, 2, 5, 8, 9, 19, and 22 were rejected under 35 U.S.C. § 103(a) in various combinations of the cited prior art under 35 U.S.C. § 103(a).

In response to the Final Office Action, Appellant filed an Amendment Under 37 C.F.R. § 1.116 ("Amendment After Final") on January 14, 2005, wherein no pending claims were amended.

On March 14, 2005, an Advisory Action ("Advisory Action") was mailed in which the Final Rejection of claims 1, 2, 5, 8, 9, 19, and 22 was maintained. The Advisory Action stated that "[f]or purposes of Appeal, the proposed amendments will be entered and an explanation of how the new or amended claims would be rejection is provided below or appended. Claims(s) rejected: 1, 2, 5, 8, 9, 19, and 22."

Appellant filed a Notice of Appeal on April 6, 2005, with a Two (2) month Extension of Time.

5) SUMMARY OF THE CLAIMED SUBJECT MATTER

The presently claimed invention is directed to various alternatives to light the keys of a remote computer keyboard coupled via a remote transmitter to the computer console or microprocessor motherboard.

In one embodiment of the invention, the identifying attribute, symbol, or symbols on each key top of the keys 102 of the keyboard, whether it be a character symbol 201 (e.g., one of the 94 standard printable characters) or a word or abbreviated word which represents one of the control characters (e.g., Esc, Tab, Caps Lock, Shift, Ctrl, Alt, Backspace, Enter, etc.) is formed from luminescent material. When the luminescent material is exposed to bright light in the visible or ultraviolet spectrum, electrons within the material are excited to orbitals of higher energy. When the light exposure is terminated, the electrons gradually decay to lower-energy orbitals, thereby releasing light in the visible spectrum. The luminescent symbols allow the user to view the letters on the computer keys in the dark room. After the luminescent effect has diminished to the point where the symbols are no longer discernable, they may be recharged by further exposure to light. Alternatively, the key attributes (i.e., character symbols, words and abbreviations) on the key caps may be formed from a translucent plastic material in which tritium is embedded. Tritium, which has a half-life of about 12.5 years, emits low-energy beta particle radiation. The radiation is of sufficiently low energy that it may be easily blocked by the material in which the tritium is embedded.

For another embodiment of the invention that is very similar to the first, the upper portions 301 of the key caps 102 themselves are molded from luminescent material, while the symbols 302 are formed from contrasting black or dark-colored non-luminescent material.

Yet another embodiment of the invention utilizes fiber optics to convey light from at least one low-power source 402, such as a light-emitting diode to each of the various key caps 102, each of which is molded from a translucent material. The symbols on the key caps are of a color which contrasts with that of the key caps. Black letters on light colored translucent key caps are the preferred combination. For this embodiment, a single light source 402 contained within the keyboard enclosure is connected to a plurality of optical fiber strands, preferably made of transparent plastic or glass. Each of these optical fiber strands 401 is routed so that light emitting

therefrom is directed to a single key top 102. A single light source may be utilized for all keys, or multiple light sources may be utilized. Greater energy efficiency will be obtained by using fewer light sources than there are keys. The light source is powered by a chemical electrical power source such as a battery or multiple dry cells. The same power source may be used to power the keyboard-to-computer communication link, whether it use infrared radiation or electromagnetic radiation in another frequency band. Alternatively, separate chemical-based energy sources may be used to power the lighting feature and the communication link. When the light source is switched on, the optical fibers transmit a portion of the light generated by the source to the various, effectively lighting the symbols on the key faces with background lighting.

Yet another embodiment of the present invention for backlighting a keyboard is to use a very thin transparent plastic or glass projector pane 501 which is positioned beneath the key caps 102 of the keyboard. At least one light source, such as an LED or an incandescent bulb is focused on the edge of the pane. When the light source is switched on, light from the source is transmitted within the projector pane and is reflected upwardly to the key caps by angled walls of apertures within the pane. The keyboard keys are made of a semi-transparent or translucent material such as a clear or translucent plastic, glass or an equivalent type of transparent material. Because the keys are light-transmissive, the light is visible through the key caps. As the symbols are of a color which contrasts with the key cap material, the symbols are readily identifiable in dim lighting conditions.

6) GROUND OF REJECTION TO BE REVIEWED ON APPEAL

(A) Whether or not claims 1, 2, 8, and 9 are patentable under 35 U.S.C. § 03(a) over the Dreher reference (United States Patent 4,551,717).

(B) Whether or not claim 5 is patentable under 35 U.S.C. § 103(a) over the Dreher reference in view of the Takami reference (United States Patent 4,205,522).

(C) Whether or not claim 19 is patentable under 35 U.S.C. § 103(a) as being unpatentable over the Stanek reference (United States Patent 5,936,554) in view of the Dreher reference in further view of the Schneider et al. reference and in yet further view of the Eventoff reference.

(D) Whether or not claim 22 is patentable under 35 U.S.C. § 103(a) over the Dreher

reference in view of the Takami reference and in further view of the Schneider et al. reference (United States Patent 6,507,673nB1) and yet further view of the Eventoff reference (United States Patent 4,451,714).

(7) ARGUMENT

(A) Authorities Relied Upon

To establish a *prima facie* case of obviousness under 35 U.S.C. § 103, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Paten App. & Inter, 1985).

A statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

The level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999)

If the proposed modification would render the prior art invention being modified

unsatisfactory for its intended purpose, then there is not suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349, (CCPA 1959).

(B) Summary of Cited Prior Art

The Dreher reference teaches or suggests a programmable key for use on a terminal having a microchip device incorporated therein to permit programming the function of the key, and one or more liquid crystal displays to indicate the programmed function of the key. A key with a clear plastic cap top has a liquid crystal display positioned to display at the top of the key. Alternately, a light emitting diode display may be used. The liquid crystal display may display one or more alpha-numeric characters. The top of the key is made of a clear plastic, glass or other transparent substance being molded having the shape of a lens.

The Takami reference teaches or suggests a watch provided with a liquid crystal display element and a reflector comprising a luminescent phosphor in limited partial area of the reflector corresponding to a specified display portion which should be visible in the dark. The luminescent phosphor includes a radioactive nuclide such as promethium or tritium¹.

The Schneider et al. reference teaches or suggests wireless keyboard including a RF transmitter coupled to a metallic plate and an antenna wire which form an antenna loop.

The antenna system and apparatus uses on a 3.0 volt power supply, such as that provided by two 1.5-volt batteries.

The Eventoff reference teaches or suggests a switch device which may include a multiplicity of switches where the circuit traces connecting the various switches are insulated from each other to prevent shorting by the application of insulative composition layer. The switch contacts may be in noncompressive touching contact with each other while still maintaining an essentially nonconductive junction between the switch contacts to thereby provide a simple switch device construction without the need of spacers.

The Stanek reference teaches or suggests a keyboard having one or more keys, each capable of illumination. The keyboard controller controls the illumination of a key on the keyboard.

(C) Arguments for Patentability of Claims

(1) **Claims 1, 2, 8 and 9.**

In the Final Rejection, claims 1, 2, 8, and 9 were rejected as being unpatentable under 35 U.S.C. § 103(a) over the Dreher reference (United States Patent 4,551, 717).

Turning to independent claim 1, the claimed invention is directed to:

A remote computer keyboard comprising:

an enclosure member;

a printed circuit board positioned in said enclosure member;

a plurality of depressible key switch devices arrayed above said printed circuit board;

a key cap mounted atop each switch device of said plurality, each key cap having at least one identifying graphic symbol formed on an upper surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material; and

a second luminescent material different than the first material forming the identifying graphic symbol, the second luminescent material embedded within each key cap substantially throughout.

Independent claim 8 is directed to:

A remote computer keyboard comprising:

an enclosure member;

a printed circuit board positioned in said enclosure member;

a plurality of depressible key switch devices arrayed above said printed circuit board; and

a key cap mounted atop each switch device of said plurality of switch devices, each key cap

having luminescent material embedded there within of a first material and having at least one identifying graphic symbol formed thereon of a second material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material.

Independent claim 9 is directed to:

A remote computer keyboard comprising:

an enclosure member;

a printed circuit board positioned in said enclosure member;

a plurality of depressible key switch devices arrayed above said printed circuit board;

a key cap mounted atop each switch device of said plurality, each key cap having at least one

identifying graphic symbol formed on an upper surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material; and

a second luminescent material embedded within each key cap different than the first material

forming the identifying graphic symbol, the second luminescent material substantially embedded throughout each key cap ; and

said at least one symbol on each key cap is identifiable under bright lighting conditions and

identifiable for a period of time in non-bright lighting conditions when said luminescent material luminesces.

Regarding the cited prior art, the Dreher reference teaches or suggests a programmable key for use on a terminal having a microchip device incorporated therein to permit programming the function of the key, and one or more liquid crystal displays to indicate to programmed function of the key. A key with a clear plastic cap top has a liquid crystal display positioned to

display at the top of the key. Alternately, a light emitting diode display may be used. The liquid crystal display one or more alpha-numeric characters. The top of the key is made of a clear plastic, glass or other transparent substance and is molded in the shape of a lens.

In the Final Rejection, it was asserted that “Dreher does not teach specifically teach a key cap with respect to a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material. Dreher also does not specifically teach a second luminescent material different than the first material forming the identifying graphic symbol, the second luminescent material embedded within each key cap substantially throughout.” It was further asserted that “Dreher on the other hand teaches that the exact shape and configuration of the key body (10) and the key cap (11) can vary depending upon the configuration of the keyboard into which it is mounted to reflect the desired styling. Dreher also teaches that the top of the key is made of a clear plastic, glass or other transparent substance. Furthermore, Dreher teaches that the key cap (11) has a lens (12) through which a character display (40) will be visible.”

It was next asserted that “[t]herefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Dreher’s teaching of various material, configurations and style to establish a preferred arrangement of the material, and type of material with respect to key cap and key body. One would have been motivated in view of the suggestion that a key cap with various materials, style and configurations equivalently meet the desired luminescent materials and their arrangements. Moreover, it would have been obvious to one of ordinary skill in the art to utilize Dreher’s lens (12) and display (40) for the purpose of identifying a character. One would have been motivated in view of the suggestion that the display (40) as configured in Fig. 1 can be used to achieve the desired identification of graphic symbol.” Continuing on in the Final Rejection, it was asserted that “[a]s to claim 2, Dreher teaches keys for keyboard . . . and all features are well known in the art.”

Appellant asserts that the Final Rejection clearly sets forth that the Dreher reference cannot establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions of claims 1, 2, 8, and 9 because, at the least, the Dreher reference does not teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir. 1991).

The Final Rejection clearly states that ““Dreher does not teach specifically teach a key cap with respect to a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material. Dreher also does not specifically teach a second luminescent material different than the first material forming the identifying graphic symbol, the second luminescent material embedded within each key cap substantially throughout.”

Appellant asserts that independent claim 1 clearly has claim limitations calling for “a key cap mounted atop each switch device of said plurality, each key cap having at least one identifying graphic symbol formed on an upper surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material” and “a second luminescent material different than the first material forming the identifying graphic symbol, the second luminescent material embedded within each key cap substantially throughout” which are not taught or suggested by the Dreher reference..

Appellant asserts that independent claim 8 clearly has claim limitations calling for “a key cap mounted atop each switch device of said plurality of switch devices, each key cap having luminescent material embedded there within of a first material and having at least one identifying graphic symbol formed thereon of a second material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material” which are not taught or suggested by the Dreher reference.

Appellant asserts that independent claim 9 clearly has claim limitations calling for “a key cap mounted atop each switch device of said plurality, each key cap having at least one identifying graphic symbol formed on an upper surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material”, “a second luminescent material embedded within each key cap different than the first material forming the identifying graphic symbol, the second luminescent material substantially embedded throughout each key cap” and “said at least one symbol on each key cap is identifiable under bright lighting conditions and identifiable for a period of time in non-bright lighting conditions when said luminescent material luminesces” which are not taught or suggested by the Dreher reference.

Appellant asserts that the Dreher reference contains no teaching or suggestion whatsoever of any luminescent material, or any material for the top of the key other than a clear plastic, glass or other transparent substance molded in the shape of a lens.

Appellant asserts that such are not the claim limitations of independent claims 1, 8, and 9 as set forth above.

Appellant asserts that, in the first instance, since it is recognized in the Final Rejection that the Dreher does not teach or suggest all the claim limitations of independent claims 1, 8, and 9, the Dreher reference does not and cannot establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding such claimed inventions. *In re Vaeck*, 947 F.2d 488, 20 USPQd 1438 (Fed.Cir. 1991).

Appellant further asserts that the initial burden has not been met by the examiner to provide some suggestion of the desirability of doing what the inventor has done and that the examiner has not complied with the requirement “To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Paten App. & Inter, 1985).

In the Final Rejection, the examiner asserted regarding the rejection of independent claims 1, 8, and 9 that “ . . . it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Dreher’s teaching of various material, configurations and style to establish a preferred arrangement of the material, and type of material with respect to key cap and key body. One would have been motivated in view of the suggestion that a key cap with various materials, style and configurations equivalently meet the desired luminescent materials and their arrangements.”

Appellant asserts that since the Dreher reference only teaches or suggests the use of an electrically powered liquid crystal display or a light emitting diode and only teaches or suggests the use of a clear plastic, glass , or other transparent substance for the key top, there has neither been any statement as to how the reference expressly or impliedly suggests the claimed

inventions of independent claims 1, 8, and 9 and nor has any convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the reference been presented. Appellant further asserts that such statements cannot be made by the Final Rejection stating that "One would have been motivated in view of the suggestion that a key cap with various materials, style and configurations equivalently meet the desired luminescent materials and their arrangements." For instance, Appellant has found no convincing line of reasoning as to why the artisan would have modified the key cap and transparent key top of the Dreher reference to be either a key cap mounted atop each switch device of said plurality, each key cap having at least one identifying graphic symbol formed on an upper surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material and a second luminescent material different than the first material forming the identifying graphic symbol, the second luminescent material embedded within each key cap substantially throughout.

Appellant asserts that any statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the reference relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to do so. . *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

Appellant asserts that the proposed modifications to the Dreher reference would render the prior art invention being modified unsatisfactory for its intended purpose so that there cannot be any suggestion or motivation to make the proposed modifications as suggested in the Final Rejection. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Appellant asserts that the proposed modifications in the Final Rejection of the Dreher reference render the prior art Dreher invention being modified unsatisfactory for its intended purpose because the Dreher reference intelligent key display would need to have the electrical power to the microcircuit eliminated, the microcircuit eliminated, and either the liquid crystal display or light emitting diode eliminated for displaying the character of the key s they no longer are operational without power. Appellant asserts that such modifications make the Dreher invention unsatisfactory for

its intended purpose of being a microcircuit controlled keyboard using electric power to illuminate a liquid crystal display or light emitting diode of an alphanumeric character in a key of the keyboard. Therefore, Appellants assert that there is not any suggestion or motivation to make the proposed modification as suggested in the Final Rejection to the Dreher reference. Accordingly, the suggested motivation to make such modifications of the Dreher reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions of independent claims 1, 8, and 9.

Appellant asserts that if the proposed modification of the prior art Dreher reference would change the principle of operation of the prior art Dreher invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349, (CCPA 1959). Appellant asserts that the proposed modifications to the Dreher reference as proposed in the Final Rejection would change the principle of operation of the prior art Dreher invention being modified because the Dreher reference intelligent key display would need to have the power eliminated to the microcircuit, the microcircuit eliminated, and either the liquid crystal display or light emitting diode eliminated for displaying the character of the key. Appellant asserts that such modifications clearly change the principle of operation of the Dreher invention making it unsatisfactory for its intended purpose of having a powered keyboard with either a liquid crystal display or a light emitting diode lighting an alphanumeric character in a key of the keyboard. Accordingly, the suggested motivation to make such modifications of the Dreher reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions of independent claims 1, 8, and 9.

In summary, Appellant asserts that claims 1, 2, 8, and 9 are allowable because the Dreher cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions.

(2) Claim 5.

In the Final Rejection, claim 5 was rejected as being unpatentable under 35 U.S.C. § 103(a) over the Dreher reference (United States Patent 4,551, 717) in view of the Takami reference (United States Patent 4,205,522).

Turing to claim 5, the claimed invention is directed to:

A remote computer keyboard comprising:

an enclosure member;

a printed circuit board positioned in said enclosure member;

a plurality of depressible key switch devices arrayed above said printed circuit board;

a key cap mounted atop each switch device of said plurality; each key cap having at least one identifying graphic symbol formed on an upper surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material; and

a second luminescent material including tritium different than the first material forming the identifying graphic symbol, the second luminescent material embedded within said at least one symbol of said key cap substantially throughout.

Regarding the cited prior art, the Dreher reference teaches or suggests a programmable key for use on a terminal having a microchip device incorporated therein to permit programming the function of the key, and one or more liquid crystal displays to indicate to programmed function of the key. A key with a clear plastic cap top has a liquid crystal display positioned to display at the top of the key. Alternately, a light emitting diode display may be used. The liquid crystal display one or more alpha-numeric characters. The top of the key is made of a clear plastic, glass or other transparent substance and is molded in the shape of a lens.

The Takami reference teaches or suggests a watch provided with a liquid crystal display element and a reflector comprising a luminescent phosphor, in a limited partial area of the reflector corresponding to a specified display portion which should be visible in the dark. The luminescent phosphor includes a radioactive nuclide such as promethium or tritium¹.

In the Final Rejection, it was asserted that "Deher does not teach a 'luminescent material

including tritium' within at least one symbol of key cap. However, Takami discloses an LCD device, which includes a luminescent phosphor, the luminescent phosphor includes a tritium (see the abstract)." It was further asserted that "[i]t would have been obvious to One (sic) of ordinary skill in the art at the time the invention was made to employ the tritium for illuminating the LCD display embedded in the key cap of Dreher because it will provide cheap natural back light source for displaying key designation and would readily understood by those skilled in the art that it would represent an alternative choice for a backlight, which advantageously does not require additional electric power."

Appellant asserts that any combination of the Dreher reference and the Takami reference does not and cannot establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention of claim 5 because, at the least, there is no suggestion in the cited prior art for any combination thereof and the Dreher reference does not teach or suggest all the claim limitations.

Appellant asserts that independent claim 5 clearly has claim limitations calling for "a key cap mounted atop each switch device of said plurality; each key cap having at least one identifying graphic symbol formed on an upper surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material" and "a second luminescent material including tritium different than the first material forming the identifying graphic symbol, the second luminescent material embedded within said at least one symbol of said key cap substantially throughout."

Appellant asserts that since any combination of the Dreher reference and the Takami reference fails to teach or suggest such claim limitations, any combination of the Dreher reference and the Takami reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103. . . *In re Vaeck*, 947 F.2d 488, 20 USPQed 1438 (Fed.Cir. 1991).

Appellant asserts that there is no suggestion in the cited prior art for any combination thereof and any combination of the cited prior art Dreher reference and the Takami reference does not teach or suggest such claim limitations.

Appellant asserts that a statement that modifications of the prior art to meet the claimed

invention would have been “well within the ordinary skill of the art at the time the claimed invention was made” because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

Appellant further asserts that the level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999). Appellant asserts that the disclosure of the present invention has been used as a template to engage in a hindsight reconstruction of the claimed invention of independent claim 5 from the prior art. Appellant asserts that neither the Dreher reference nor the Takami reference contains any suggestion for any combination thereof. Appellant asserts that since the Dreher reference only uses a programmable powered light source, there is no suggestion for any use of a luminescent material in the keys thereof whatsoever. Appellant asserts that since the Takami reference is directed to a liquid crystal display watch, not a keyboard, that the use of the Takami reference to modify the Dreher reference to include an element not present in the invention is *prima facie* evidence of a hindsight reconstruction of the claimed invention of independent claim 5 solely from the use of Appellant's disclosure. Appellant asserts that the skill level in the art is not relevant to the claimed invention when the cited prior art has no teaching or suggestion for creating elements and claim limitations of the claimed invention not present in the cited prior art.

Appellant again asserts that since the Dreher reference only teaches or suggests the use of a liquid crystal display or a light emitting diode and only teaches or suggests the use of a clear plastic, glass, or other transparent substance for the key top, there has not been any statement as to how the reference expressly or impliedly suggests the claimed invention of independent claim 5 and nor has any convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the reference been presented. Appellant has found no convincing line of reasoning as to why the artisan would have modified the key cap and transparent key top of the Dreher reference to be either a key cap mounted atop each switch device of said plurality, each key cap having at least one identifying graphic symbol

formed on an upper surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material and a second luminescent material including tritium different than the first material forming the identifying graphic symbol, the second luminescent material embedded within said at least one symbol of said key cap substantially throughout . Appellant asserts that, to the contrary, one of ordinary skill in the art at the time the invention would not employ the tritium for illuminating the electrically powered liquid crystal display or the light emitting diode in the key cap of Dreher because it will provide cheap natural back light source for displaying key designation and would readily understood by those skilled in the art that it would represent an alternative choice for a backlight, which advantageously does not require additional electric power. Appellant asserts that to include a radioactive material in the keys of the Dreher reference key board would not be considered by one of ordinary skill in the art because the risk of radiation from the tritium affecting the operation of the state controller of the microcircuit rendering it inoperable.

Appellant asserts that the proposed modifications to the Dreher reference based upon the teachings of the Takami reference would render the prior art invention being modified unsatisfactory for its intended purpose so that there is not any suggestion or motivation to make the proposed modification as suggested in the Final Rejection. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Appellant asserts that the proposed modifications in the Final Rejection of the Dreher reference in view of the Takami reference render the prior art Dreher invention being modified based upon the Takami reference would make it unsatisfactory for its intended purpose because the Dreher reference intelligent key display would need to have the power to the microcircuit eliminated, the microcircuit eliminated, and either the liquid crystal display or light emitting diode eliminated for displaying the character of the key. Appellant asserts that such modifications make the Dreher invention unsatisfactory for its intended purpose. Therefore, Appellants assert that that there is not any suggestion or motivation to make the proposed modification as suggested in the Final Rejection to the Dreher reference based upon the Takami reference. Accordingly, the suggested motivation to make such modifications of the Dreher reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103

regarding the claimed inventions of independent claim 5.

Appellant asserts that if the proposed modification of the prior art Dreher reference based upon the Takami reference would change the principle of operation of the prior art Dreher invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349, (CCPA 1959). Appellant asserts that the proposed modifications to the Dreher reference based upon the Takami reference as proposed in the Final Rejection would change the principle of operation of the prior art Dreher invention being modified because the Dreher reference intelligent key display would need to have the power to the microcircuit eliminated, the microcircuit eliminated, and either the liquid crystal display or light emitting diode eliminated for displaying the character of the key. Appellant asserts that such modifications clearly change the principle of operation of the Dreher invention making it unsatisfactory for its intended purpose. Accordingly, the suggested motivation to make such modifications of the Dreher reference based upon the Takami reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions of independent claim 5.

In summary, Appellant asserts that claim 5 is allowable because any combination of the Dreher reference and the Takami reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions.

(3) Claim 19

In the Final Rejection, claim 19 was rejected as being unpatentable under 35 U.S.C. § 103(a) over the Stanek reference (United States Patent 5,936,554) in view of the Dreher reference (United States Patent 4,551,717) in further view of the Schneider et al. reference (United States Patent (6,507,763 B1) and in yet further view of the Eventoff reference (United States Patent 4,451,714).

Turning to independent claim 19, the claimed invention is directed to:

A remote computer keyboard comprising:
an enclosure member;
a chemical source of electrical power;

a transmitter mounted on said enclosure member, said transmitter powered by said chemical source of electrical power;
an insulative material layer covered with circuit traces, said insulative material layer being positioned in said enclosure member, said circuit traces being coupled to said transmitter;
a plurality of depressible key switch devices arrayed above said insulative material layer;
a key cap mounted atop each switch device of said plurality of switch devices, each key cap having at least one identifying graphic symbol formed on a surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material; and
a second luminescent material embedded within a portion of each key cap different than the first material forming the identifying graphic symbol, the second luminescent material substantially embedded throughout each key cap.

Regarding the cited prior art, the Stanek reference teaches or suggests a keyboard having one or more keys, each capable of illumination. The keyboard controller controls the illumination of a key on the keyboard.

The Dreher reference teaches or suggests a programmable key for use on a terminal having a microchip device incorporated therein to permit programming the function of the key, and one or more liquid crystal displays to indicate a programmed function of the key. A key with a clear plastic cap top has a liquid crystal display positioned to display at the top of the key. Alternately, a light emitting diode display may be used. The liquid crystal display one or more alpha-numeric characters. The top of the key is made of a clear plastic, glass or other transparent substance and is molded in the shape of a lens.

The Schneider et al. reference teaches or suggests wireless keyboard including a RF transmitter coupled to a metallic plate and an antenna wire which form an antenna loop. The antenna system and apparatus uses on a 3.0 volt power supply, such as that provided by two 1.5-volt batteries.

The Eventoff reference teaches or suggests a switch device which may include a multiplicity of switches where the circuit traces connecting the various switches are insulated from each other to prevent shorting by the application of insulative composition layer. The

switch contacts may be in noncompressive touching contact with each other while still maintaining an essentially nonconductive junction between the switch contacts to thereby provide a simple switch device construction without the need of spacers.

In the Final Rejection, it was asserted that “ . . . it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stanek’s input device to incorporate Dreher’s teaching of various configurations and style with respect to key cap and key body. One would have been motivated in view of the suggestion that a key cap with various materials, style and configurations equivalently meet the desired luminescent materials and their arrangements. The use of various materials, configurations and style with respect to key cap and key body helps function (sic) a keyboard.” It was further asserted that “ . . . it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the transmitter and chemical source of electrical power of Schneider et al. in the keyboard of Stanek to provide a wireless keyboard having interactively illuminating keys, each key is also to a command (sic) to dim the key.” Yet further, it was asserted that “ . . . it would have been obvious to one of ordinary skill in the art to utilize the insulative material of Stanek in the keyboard of Stanek-Schneither (sic) to provide a key board having switching circuit assemblies without spacer to effect electrical isolation between opposing circuit traces and switch circuits.”

Appellant asserts that any combination of the Stanek reference, the Dreher reference, the Schneider et al. reference, and the Eventoff reference does not and cannot establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention of claim 5 because, at the least, there is no suggestion in the cited prior art for any combination thereof and the combination of the cited prior art does not teach or suggest all the claim limitations.

Appellant asserts that independent claim 19 clearly has claim limitations calling for “a key cap mounted atop each switch device of said plurality of switch devices, each key cap having at least one identifying graphic symbol formed on a surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material” and “a second luminescent material embedded within a portion of each key cap different than the first material forming the identifying graphic symbol, the second luminescent material substantially embedded throughout each key cap”.

Appellant asserts that there is no suggestion in the cited prior art for any combination thereof and any combination of the cited prior art Stanek reference, the Dreher reference, the Schneider et al. reference, and the Eventoff reference does not teach or suggest such claim limitations. None of the cited prior art references either singly or in any combination thereof teaches or suggests any such claim limitations. At best, the cited prior art combination teaches or suggests the use of computer controlled electrically powered lights for the keys of the keyboard. Appellant asserts that such is not the claimed invention of claim 19.

Appellant asserts that since any combination of the Stanek reference, the Dreher reference, the Schneider et al. reference, and the Eventoff reference fails to teach or suggest such claim limitations, any combination of the Dreher reference and the Takami reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103. . *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir. 1991).

Appellant asserts that a statement that modifications of the prior art to meet the claimed invention would have been “well within the ordinary skill of the art at the time the claimed invention was made” because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

Appellant further asserts that the level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

Appellant asserts that the disclosure of the present invention has been used as a template to engage in a hindsight reconstruction of the claimed invention of independent claim 5 from the prior art. Appellant asserts that neither the Stanek reference, nor the Dreher reference, nor the Schneider et al. reference nor the Eventoff reference contains any suggestion for any combination thereof whatsoever. Appellant asserts that since the Stanek reference only uses a programmable powered light source, there is no suggestion for any use of a luminescent material in the keys thereof whatsoever. Appellant asserts that since the Dreher reference does not suggest anything other than a programmable powered microcircuit light source for the keys of the keyboard.

Appellant asserts that the Schneider et al. merely teaches or suggests reference teaches or suggests wireless keyboard including a RF transmitter coupled to a metallic plate and an antenna wire which form an antenna loop. The antenna system and apparatus uses on a 3.0 volt power supply, such as that provided by two 1.5-volt batteries. Appellant asserts that the Eventoff reference merely teaches or suggests a switch device which may include a multiplicity of switches where the circuit traces connecting the various switches are insulated from each other to prevent shorting by the application of insulative composition layer.

Appellant asserts that the combination of the cited prior art Stanek reference, Dreher reference, Schneider et al. reference, and Eventoff reference in a rejection is *prima facie* evidence of a hindsight reconstruction of the claimed invention of independent claim 19 solely from the use of Appellant's disclosure. Appellant asserts that the skill level in the art is not relevant to the claimed invention when the cited prior art has no teaching or suggestion for creating elements of the claimed invention not present in the cited prior art.

Appellant again asserts that since the Stanek reference and the Dreher reference only teaches or suggests the use of a liquid crystal display or a light emitting diode and only teaches or suggests the use of a clear plastic, glass, or other transparent substance for the key top, there has not been any statement as to how the reference expressly or impliedly suggests the claimed invention of independent claim 19 and nor has any convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the reference been presented. Appellant has found no convincing line of reasoning as to why the artisan would have modified the Stanek reference key or the key cap and transparent key top of the Dreher reference to be a key cap mounted atop each switch device of said plurality to have a second luminescent material embedded within a portion of each key cap different than the first material forming the identifying graphic symbol, the second luminescent material substantially embedded throughout each key cap. Appellant asserts that, to the contrary, one of ordinary skill in the art at the time the invention would not employ a luminescent material for illuminating either the liquid crystal display or the light emitting diode embedded in the key cap of either the Stanek reference or the Dreher reference. .

Appellant asserts that the proposed modifications to the Stanek reference in view of the Dreher reference, the Schneider et al. reference and the Eventoff reference would render the prior art invention being modified unsatisfactory for its intended purpose so that there is not any suggestion or motivation to make the proposed modification as suggested in the Final Rejection. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Appellant asserts that the proposed modifications in the Final Rejection of the Stanek reference in view of the Dreher reference in view of the Schneider et al. reference and the Eventoff reference render the prior art Stanek invention unsatisfactory for its intended purpose because the Stanek reference intelligent key display would need to have the keyboard controller eliminated and electrically powered light eliminated for displaying the character of the key. Appellant asserts that such modifications make the Stanek invention unsatisfactory for its intended purpose. Therefore, Appellants assert that that there is not any suggestion or motivation to make the proposed modification as suggested in the Final Rejection to the Stanek reference in view of the Dreher reference in view of the Schneider et al. reference and in view of the Eventoff reference. Accordingly, the suggested motivation to make such modifications of the Stanek reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions of independent claim 19.

Appellant asserts that if the proposed modification of the prior art Stanek reference in view of the Dreher reference in view of the Schneider et al. reference and in view of the Eventoff reference would change the principle of operation of the prior art Stanek invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349, (CCPA 1959). Appellant asserts that the proposed modifications to the Stanek reference in view of the Dreher reference in view of the Schneider et al. reference and in view of the Eventoff reference as proposed in the Final Rejection would change the principle of operation of the prior art Stanek invention being modified because the Stanek reference intelligent key display would need to have the keyboard controller eliminated and the light emitting diode eliminated for displaying the character of the key. Appellant asserts that such modifications clearly change the principle of operation of the Stanek invention making it unsatisfactory for its intended purpose. Accordingly, the suggested

motivation to make such modifications of the Stanek reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention of independent claim 19.

In summary, Appellant asserts that claim 19 is allowable because any combination of the Stanek reference in view of the Dreher reference in view of the Schneider et al. reference and in view of the Eventoff reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention.

(4) Claim 22

In the Final Rejection, claim 22 was rejected as being unpatentable under 35 U.S.C. § 103(a) over the Dreher reference (United States Patent 4,551,717) in view of the Takami reference (United States Patent 4,205,522) in further view of the Schneider et al. reference (United States Patent 6,507,763 B1) and in yet further view of the Eventoff reference (United States Patent 4,451,714).

Turning to claim 22, the invention is directed to:

A remote computer keyboard comprising:

- an enclosure member;
- a chemical source of electrical power;
- a transmitter mounted on said enclosure member, said transmitter powered by said chemical source of electrical power;
- an insulative material layer covered with circuit traces, said insulative material layer being positioned in said enclosure member, said circuit traces being coupled to said transmitter;
- a plurality of depressible key switch devices arrayed above said insulative material layer;
- a key cap mounted atop each switch device of said plurality of switch devices, each key cap having at least one identifying graphic symbol formed on a surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material; and

a second luminescent material including tritium embedded within said at least one symbol of each key cap different than the first material forming the identifying graphic symbol, the second luminescent material substantially embedded throughout each key cap.

Regarding the cited prior art, the Dreher reference teaches or suggests a programmable key for use on a terminal having a microchip device incorporated therein to permit programming the function of the key, and one or more liquid crystal displays to indicate to programmed function of the key. A key with a clear plastic cap top has a liquid crystal display positioned to display at the top of the key. Alternately, a light emitting diode display may be used. The liquid crystal display one or more alpha-numeric characters. The top of the key is made of a clear plastic, glass or other transparent substance and is molded in the shape of a lens.

The Takami reference teaches or suggests a watch provided with a liquid crystal display element and a reflector comprising a luminescent phosphor, in a limited partial area of the reflector corresponding to a specified display portion which should be visible in the dark. The luminescent phosphor includes a radioactive nuclide such as promethium or tritium¹.

The Schneider et al. reference teaches or suggests wireless keyboard including a RF transmitter coupled to a metallic plate and an antenna wire which form an antenna loop. The antenna system and apparatus uses on a 3.0 volt power supply, such as that provided by two 1.5-volt batteries.

The Eventoff reference teaches or suggests a switch device which may include one or a multiplicity of switches where the circuit traces connecting the various switches are insulated from each other to prevent shorting by the application of insulative composition layer. The switch contacts may be in noncompressive touching contact with each other while still maintaining an essentially nonconductive junction between the switch contacts to thereby provide a simple switch device construction without the need of spacers.

In the Final Rejection, it was asserted that “ . . . it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the insulative material of Schneider incorporate (sic) in the keyboard of Dreher-Takami-Schneider to provide a remote keyboard having using luminescent keys for improved view in dark condition (sic).”

Appellant asserts that any combination of the Dreher reference and the Takami reference and the Schneider et al. reference and the Eventoff reference does not and cannot establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention of claim 2 because, at the least, there is no suggestion in the cited prior art for any combination thereof and any combination of the cited prior art does not teach or suggest all the claim limitations.

Appellant asserts that independent claim 22 clearly has claim limitations calling for “a key cap mounted atop each switch device of said plurality of switch devices, each key cap having at least one identifying graphic symbol formed on a surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material” and “a second luminescent material including tritium embedded within said at least one symbol of each key cap different than the first material forming the identifying graphic symbol, the second luminescent material substantially embedded throughout each key cap”. Appellant asserts that there is no suggestion in the cited prior art for any combination thereof and any combination of the cited prior art Dreher reference and the Takami reference and Schneider et al. reference and the Eventoff reference does not teach or suggest such claim limitations.

Appellant asserts that since any combination of the the Dreher reference, the Takami reference, the Schneider et al. reference, and the Eventoff reference fails to teach or suggest such claim limitations, any combination of the Dreher reference and the Takami reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103. . . *In re Vaeck*, 947 F.2d 488, 20 USPQed 1438 (Fed.Cir. 1991).

Appellant asserts that a statement that modifications of the prior art to meet the claimed invention would have been “obvious to one of ordinary skill in the art at the time of the invention was made . . .” because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. (See argument with respect to modification of the Dreher reference with respect to claims 1,2 8, and 9.) *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). Appellant further asserts that the level of skill in the art cannot be relied upon to provide the suggestion to combine

references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

Appellant asserts that the disclosure of the present invention has been used as a template to engage in a hindsight reconstruction of the claimed invention of independent claim 22 from the prior art. Appellant asserts that neither the Dreher reference nor the Takami reference nor the Schnieder et al. reference nor the Eventoff reference contains any suggestion for any combination thereof. Appellant asserts that since the Dreher reference only uses a microcircuit powered light source, there is no suggestion for any use of a luminescent material in the keys thereof whatsoever. Appellant asserts that since the Takami reference is directed to a liquid crystal display watch, not a keyboard, that the use of the Takami reference and the Schneider et al. reference and the Eventoff reference to modify the Dreher reference to include an element not present in any of the cited prior art in a rejection is *prima facie* evidence of a hindsight reconstruction of the claimed invention of independent claim 22 solely from the use of Appellant's disclosure. Appellant asserts that the skill level in the art is not relevant to the claimed invention when the cited prior art has no teaching or suggestion for creating elements of the claimed invention not present in the cited prior art.

Appellant again asserts that since the Dreher reference only teaches or suggests the use of a liquid crystal display or a light emitting diode and only teaches or suggests the use of a clear plastic, glass, or other transparent substance for the key top, there has not been any statement as to how the reference expressly or impliedly suggests the claimed invention of independent claim 22 and nor has any convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the reference been presented. Appellant has found no convincing line of reasoning as to why the artisan would have modified the key cap and transparent key top of the Dreher reference to be either a key cap mounted atop each switch device of said plurality, each key cap having at least one identifying graphic symbol formed on an upper surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material and a second luminescent material including tritium different than the first material forming the identifying graphic symbol, the second luminescent material embedded within said at least one symbol of said key cap substantially throughout .

Appellant asserts that the proposed modifications to the Dreher reference based upon the teachings of the Takami reference would render the prior art invention being modified unsatisfactory for its intended purpose so that there is not any suggestion or motivation to make the proposed modification as suggested in the Final Rejection. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Appellant asserts that the proposed modifications in the Final Rejection of the Dreher reference in view of the Takami reference and the Schneider et al. reference and the Eventoff reference render the prior art Dreher invention unsatisfactory for its intended purpose because the Dreher reference intelligent key display would need to have the microcircuit eliminated and either the liquid crystal display or light emitting diode eliminated for displaying the character of the key. Appellant asserts that such modifications make the Dreher invention unsatisfactory for its intended purpose. Therefore, Appellants assert that that there is not any suggestion or motivation to make the proposed modification as suggested in the Final Rejection to the Dreher reference based upon the Takami reference and the Schneider et al. reference and the Eventoff reference. Accordingly, the suggested motivation to make such modifications of the Dreher reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions of independent claim 22.

Appellant asserts that if the proposed modification of the prior art Dreher reference based upon the Takami reference and the Schneidere et al. reference and the Eventoff reference would change the principle of operation of the prior art Dreher invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349, (CCPA 1959). Appellant asserts that the proposed modifications to the Dreher reference based upon the Takami reference and the Schneider et al. reference and the Eventoff reference as proposed in the Final Rejection would change the principle of operation of the prior art Dreher invention being modified because the Dreher reference intelligent key display would need to have the power to the microcircuit eliminated, the microcircuit eliminated, and either the liquid crystal display or light emitting diode eliminated for displaying the character of the key. Appellant asserts that such modifications clearly change the principle of operation of the Dreher invention making it unsatisfactory for its intended purpose. Accordingly, the suggested motivation to make such modifications of the Dreher reference

cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions of independent claim 22.

In summary, Appellant asserts that claim 22 is allowable because any combination of the Dreher reference and the Takami reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions.

(8) **CLAIMS APPENDIX**

A copy of claims 1, 2, 5, 8, 9, 19, and 22 is appended hereto as "Appendix A."

CONCLUSION

Appellant respectfully submits that claims 1, 2, 5, 8, 9, 19, and 22 are allowable over the cited references of record. Appellant respectfully requests that the rejections of claims 1, 2, 5, 8, 9, 19, and 22 under U.S.C. § 103(a) be reversed.

Respectfully submitted,



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APPENDIX A

Claims 1, 2, 5, 8, 9, 19, and 22

U.S. Patent Application No. 09/544,000

Filed April 6, 2000

1. (Previously Presented) A remote computer keyboard comprising:
an enclosure member;
a printed circuit board positioned in said enclosure member;
a plurality of depressible key switch devices arrayed above said printed circuit board;
a key cap mounted atop each switch device of said plurality, each key cap having at least one
identifying graphic symbol formed on an upper surface thereof of a first material having
no electrical connection thereto including one of a black material and a dark-colored non-
luminescent material; and
a second luminescent material different than the first material forming the identifying graphic
symbol, the second luminescent material embedded within each key cap substantially throughout.

2. (Previously Presented) The remote computer keyboard of claim 1, wherein said
plurality of depressible key switch devices includes a switch for a space function, a switch for a
shift function, and a switch for a control function.

5. (Previously Presented) A remote computer keyboard comprising:
an enclosure member;
a printed circuit board positioned in said enclosure member;
a plurality of depressible key switch devices arrayed above said printed circuit board;
a key cap mounted atop each switch device of said plurality; each key cap having at least one
identifying graphic symbol formed on an upper surface thereof of a first material having
no electrical connection thereto including one of a black material and a dark-colored non-
luminescent material; and
a second luminescent material including tritium different than the first material forming the
identifying graphic symbol, the second luminescent material embedded within said at
least one symbol of said key cap substantially throughout.

8. (Previously Presented) A remote computer keyboard comprising:
an enclosure member;
a printed circuit board positioned in said enclosure member;
a plurality of depressible key switch devices arrayed above said printed circuit board; and
a key cap mounted atop each switch device of said plurality of switch devices, each key cap
having luminescent material embedded there within of a first material and having at least
one identifying graphic symbol formed thereon of a second material having no electrical
connection thereto including one of a black material and a dark-colored non-luminescent
material.

9. (Previously Presented) A remote computer keyboard comprising:
an enclosure member;
a printed circuit board positioned in said enclosure member;
a plurality of depressible key switch devices arrayed above said printed circuit board;
a key cap mounted atop each switch device of said plurality, each key cap having at least one
identifying graphic symbol formed on an upper surface thereof of a first material having
no electrical connection thereto including one of a black material and a dark-colored non-
luminescent material; and
a second luminescent material embedded within each key cap different than the first material
forming the identifying graphic symbol, the second luminescent material substantially
embedded throughout each key cap ; and
said at least one symbol on each key cap is identifiable under bright lighting conditions and
identifiable for a period of time in non-bright lighting conditions when said luminescent
material luminesces.

19. (Previously Presented) A remote computer keyboard comprising:
an enclosure member;
a chemical source of electrical power;

a transmitter mounted on said enclosure member, said transmitter powered by said chemical source of electrical power;
an insulative material layer covered with circuit traces, said insulative material layer being positioned in said enclosure member, said circuit traces being coupled to said transmitter;
a plurality of depressible key switch devices arrayed above said insulative material layer;
a key cap mounted atop each switch device of said plurality of switch devices, each key cap having at least one identifying graphic symbol formed on a surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material; and
a second luminescent material embedded within a portion of each key cap different than the first material forming the identifying graphic symbol, the second luminescent material substantially embedded throughout each key cap.

22. (Previously Presented) A remote computer keyboard comprising:
an enclosure member;
a chemical source of electrical power;
a transmitter mounted on said enclosure member, said transmitter powered by said chemical source of electrical power;
an insulative material layer covered with circuit traces, said insulative material layer being positioned in said enclosure member, said circuit traces being coupled to said transmitter;
a plurality of depressible key switch devices arrayed above said insulative material layer;
a key cap mounted atop each switch device of said plurality of switch devices, each key cap having at least one identifying graphic symbol formed on a surface thereof of a first material having no electrical connection thereto including one of a black material and a dark-colored non-luminescent material; and
a second luminescent material including tritium embedded within said at least one symbol of each key cap different than the first material forming the identifying graphic symbol, the second luminescent material substantially embedded throughout each key cap.